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# CCSDS ESA/JPL MO Services Shadow Project Status Outbrief

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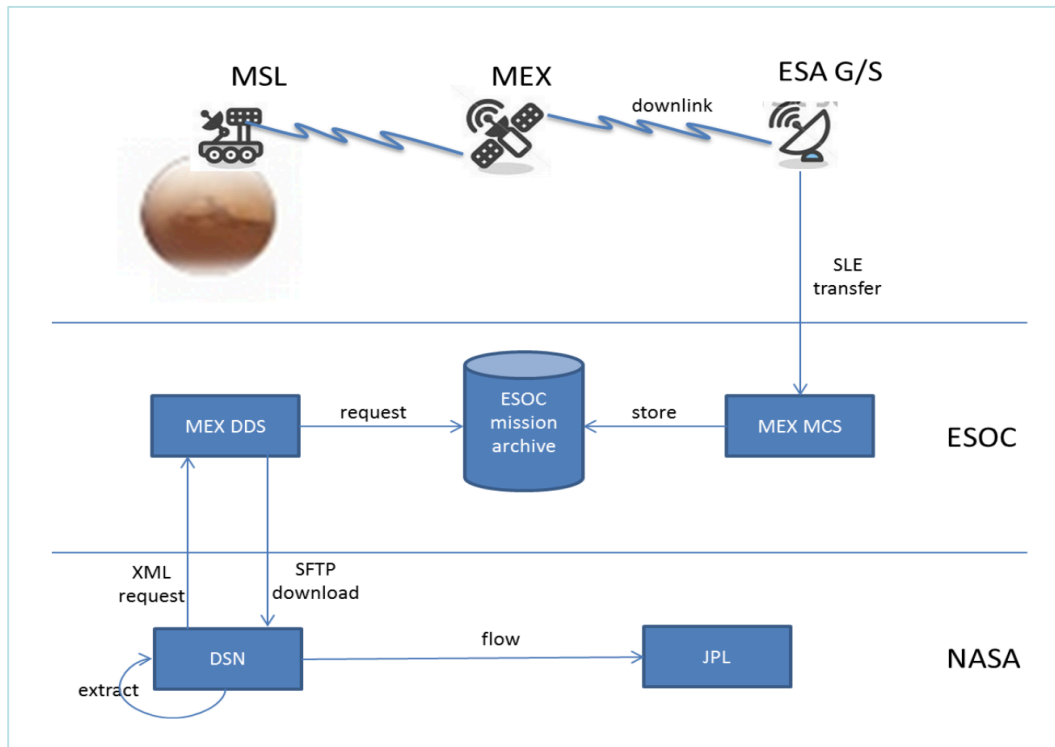
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# Overview

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- Exercise of using the CCSDS Mission Operations Services to exchange:
    1. MSL Relay Data
    2. MEX Overflight performance data.
  - Perform this experiment in a way that doesn't affect real operations. "Shadow"
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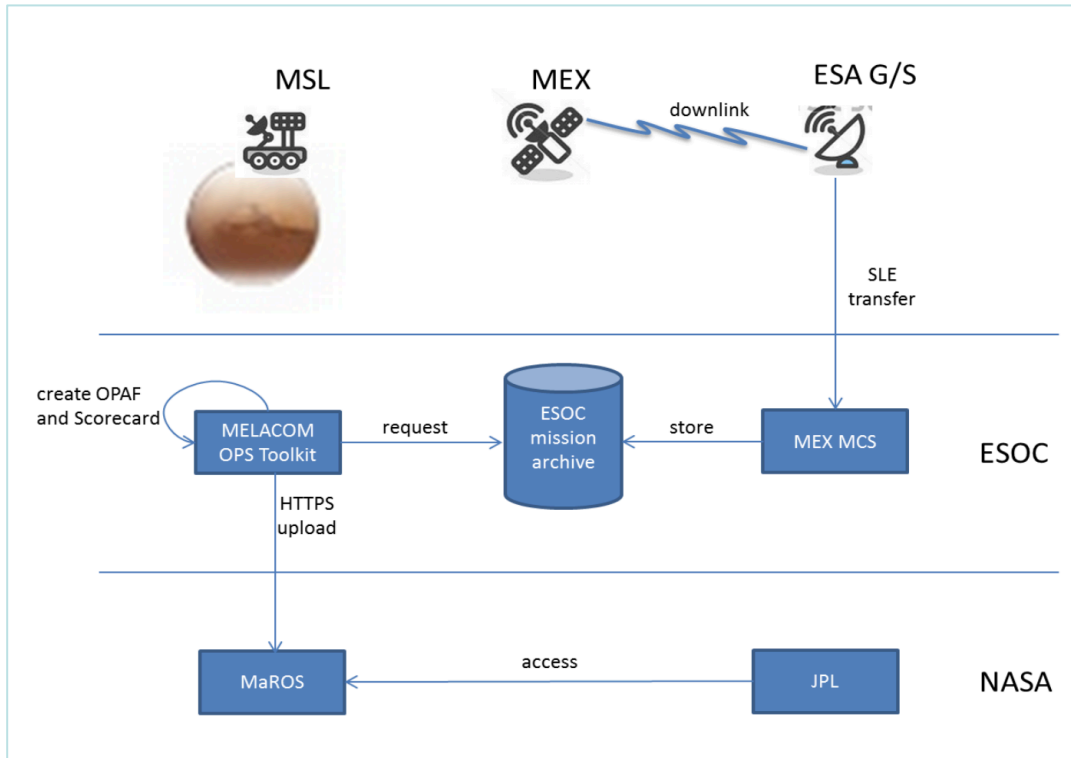
# Current MSL-MEX Data Relay



- MSL data wrapped in MELACOM packets stored in ESOC mission archive.
- DSN operator submits a request to MEX DDS via FTP
- MEX DDS extracts MELACOM packets from mission archive and stores in a file locally
- DSN operator downloads the file via SFTP then extracts MSL data from MELACOM packets
- DSN operator flows MSL data to TDS



# Current Relay Performance Data Exchange

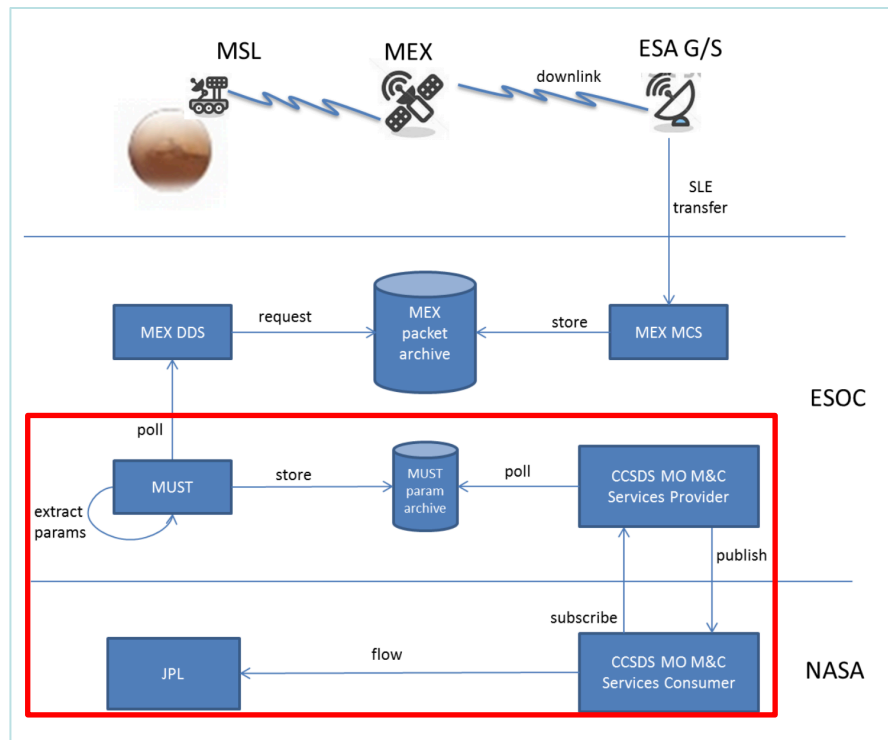


- MEX relay performance data wrapped in MELACOM packets stored in ESOC mission archive.
- ESOC engineer extracts data using MELACOM Ops Toolkit: OPAF and Scorecard.
- OPAF and Scorecard manually uploaded to MaROS
- JPL access data through MaROS

Brabbin, P., ESOC-JPL Shadow Project: Provisioning of MSL and MEX Telemetry using CCSDS Mission Operations M&C Services Technical Implementation Proposal, 18/06/2018



# MSL/MEX Data Exchange with MO Services



- ESOC operates an MO M&C Services Provider (Parameter, Aggregation, Alert)
  - MO Provider polls the archive for MELACOM packets, extracts data and stores in a COM archive, and publishes data to subscribed clients
- JPL/DSN operates an MO M&C Services Consumer that subscribes to the defined MSL/MEX parameters

# Current Task Status

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- JPL has implemented a basic MO Services Client that is able to subscribe to Parameter, Aggregation, and Alert Services.
    - Verified basic functionality using MO Services Provider running locally. (MO Services Provider binaries supplied by ESOC)
    - Tested using TCP binding as well as JPL implementation of HTTP binding
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# Nominal Test Cases (1/2)

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Perform Firewall Connectivity Tests (once ZAR is back in place)

- Verify firewall exceptions are correctly in place

## 5.2.1 Consumer-Provider Connectivity

- Verify consumer and provider are configured correctly

## 5.2.2 MSL Data Blocks Reception Test

- Verify MSL data can be exchanged between ESOC/JPL via MO services

## 5.2.3 Individual MELACOM Parameters Reception Test

- Verify JPL can receive overflight performance data from ESOC via parameter service

# Nominal Test Cases (2/2)

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## 5.2.4 MELACOM Parameter Group Reception Test

- Verify JPL can receive aggregate parameters via aggregation service

## 5.2.5 Parameter Group Definition Test

- Verify JPL can define parameter groups via aggregation service

## 5.2.6 JPL Defined Parameter Group Reception Test

- Verify JPL can receive JPL-defined parameter groups



# Test Cases Report

ID	Description	Status	Date Executed	Notes
5.1	Firewall Connectivity			
5.2.1	Consumer-Provider Connectivity		TBS	
5.2.2	MSL Data Blocks Reception			
5.2.3	Individual MELACOM Parameters Reception			

# Test Cases Report

ID	Description	Status	Date Executed	Notes
5.2.4	MELACOM Parameter Aggregation Reception		TBS	
5.2.5	Parameter Aggregation Definition			
5.2.6	JPL Defined Parameter Aggregation Reception			